PATENT

Attorney Docket No. SIC-03-024

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of: KOUJI OOHARA Application No.: 10/604,813 Filed: August 19, 2003 For: POWER STABILIZING APPARATUS FOR A BICYCLE ELECTRICAL COMPONENT	Examiner: Dru M. Parries Art Unit: 2836 APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

This is an appeal brief for the above-captioned matter.

I. Real Party In Interest

The assignee and real party in interest is Shimano, Inc., a Japanese corporation having a principal place of business in Osaka, Japan.

II. Related Appeals And Interferences

There are no prior or pending appeals, interferences or judicial proceedings known to the appellant, to appellant's legal representative, or to the assignee which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. Status Of Claims

Claims 28-48 are pending under final rejection and are under appeal. Claims 1-27 have been canceled.

IV. Status Of Amendments

No amendment was filed subsequent to final rejection.

V. Summary Of Claimed Subject Matter

The application discloses an apparatus for stabilizing power to a bicycle component. Cited reference numbers and text are examples only and are not intended to be limiting. Line numbers refer to the line numbers within each individually cited paragraph.

As applied to independent claim 28, a bicycle electrical control apparatus comprises:

a programmed power/control circuit ((35), Fig. 3, page 4, paragraph [0015], lines 1-2) that receives power from a power supply ((19), Fig. 3, pages 3-4, paragraph [0014], lines 7-9) and outputs a composite signal having a power signal component and a control signal component (pages 4-5, paragraph [0016], lines 1-3), wherein the control signal component contains information such that the composite signal can be decoded to extract the information contained in the control signal component (pages 4-5, paragraph [0016], lines 4-7);

a first electrical bicycle component ((55), Fig. 3, page 5, paragraph [0018], lines 1-3) that receives the composite signal and is controlled by the information contained in the control signal component of the composite signal (pages 4-5, paragraph [0016], lines 4-7);

a second electrical bicycle component ((58), Fig. 3, page 5, paragraph [0018], lines 2-3) that receives the composite signal but is not controlled by the control signal component of the composite signal (page 6, paragraph [0021], lines 5-11); and

a power stabilizing circuit ((57), page 5, paragraph [0018], lines 2-3) that receives the composite signal, stabilizes power provided from the composite signal, and provides stabilized power to the second electrical bicycle component (page 6, paragraph [0021], lines 11-14).

VI. Grounds of Rejection to be Reviewed on Appeal

Claims 28-32, 34-39, 42-46 and 48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Spencer, et al (US 6,047,230) in view of Schwaller (US 5,247,430) and admitted prior art.

Claims 33 and 47 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Spencer, et al, Schwaller and admitted prior art in view of and Gohda (US 4,609,982).

Claim 40 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Spencer, et al, Schwaller and admitted prior art in view of and Tomita (JP 07-229,909).

Claim 41 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Spencer, at al, Schwaller and admitted prior art in view of Turner (US 2002/0014366).

VII. Argument

Rejection under 35 U.S.C. §103(a) over Spencer, et al (US 6,047,230) in view of Schwaller (US 5,247,430) and admitted prior art.

Claims 28-32, 34-38, 42-46

Spencer, et al discloses an automatic bicycle transmission wherein a controller (21) receives power from a power supply (30) and receives information signals from various input components (e.g., 23-28 and 32-33). Controller (21) processes the signals from the various input components and determines when to provide signals to a shifter motor (29) that changes gears in the bicycle transmission. Controller (21) also provides signals to a display (31) that displays various information.

Schawaller discloses a bicycle lighting system wherein a switching controller ((1), Figs. 1 and 2) regulates the voltage from an alternating current generator (G) and provides the regulated voltage to lamps R_L and V_L. As shown in Fig. 2, switching controller (1) uses an oscillator (11) and an operational amplifier (4) to produce ON/OFF pulses having the variable duty-ratio shown in Fig.

3. An L-C circuit shown in Fig. 2 and described at column 3, lines 53-54 is used to convert the pulses into a direct current signal supplied to lamps R_L and V_L.

The Appellant states at page 1, paragraph [0003], lines 1-3 of the specification that technology for communicating power and control signals using integrated or composite signals has been developed to reduce the number of wires required between the various electrical components.

The Examiner alleges that it would have been obvious to one of ordinary skill in the art at the time of the invention to use composite signals throughout Spencer's bicycle system so that only one wire needs to be used for each component for power and control purposes. See the continuation sheet of the Advisory Action dated September 5, 2007. The underpinning of such reasoning is to reduce the number of wires around the bicycle. See page 3, second paragraph, of the Office Action dated June 12, 2007.

Rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR International Co. v. Teleflex Inc.* 550 U.S. __, 82 USPQ2d 1385, 1396 (2007). While the examiner articulated a reason that it would have been obvious to one of ordinary skill in the art at the time of the invention to use composite signals throughout Spencer's bicycle system so that only one wire needs to be used for each component for power and control purposes, it is respectfully submitted that the proposed underpinning – to reduce the number of wires around the bicycle - is a *non sequitur*. A wire reduction occurs only with components that use both power and control signals. More specifically, such components require at least two wires: one wire for the power signal and one or more wires for the control signal(s). Using a composite signal allows such components to be powered and controlled using a single wire. However, components that do not use control signals use only one wire to begin with - a power wire. Lamps do not use control signals. Thus, there is no reason to power non-controlled components with a composite signal to save wires because there are no wires to be saved with such components.

Claim 39

The Examiner stated that Spencer teaches controlling the gear shift driving component via a composite signal which includes a control signal comprising a speed indicating signal. See the continuation sheet of the Advisory Action dated September 5, 2007. Nowhere does Spencer, et al disclose such a thing. There is no apparent reason to make a control signal component of a *composite* signal (from claim 28) comprising a speed indicating signal as recited in claim 39.

Claim 48

The Examiner stated that Spencer, et al's gear shift driving component (29) (first electrical bicycle component) comprises a CPU. See page 2 of the Office Action dated June 12, 2007. However, that is not the case. The only CPU resides in Spencer, et al's controller (21). In response to Appellant's argument to that effect, the examiner stated that Spencer, et al's gear change actuator is equivalent to a CPU, which receives a composite signal and is controlled by the control signal component of the composite signal. See the continuation sheet of the Advisory Action dated September 5, 2007. Such a conclusory statement is expressly prohibited by *KSR*. No rational underpinning was provided for the alleged equivalence.

It appears that Spencer, et al's gear shift actuator is shown in Fig. 17, with the gear shift motor being shown in Fig. 13A. The gear shift actuator system (172, 173) is part of hardware (163) shown in Fig. 16 and described at column 9, lines 16-47. Appellant fails to see how these hardware components can be said to be equivalent to a CPU.

There is no apparent reason to make a first electrical bicycle component comprising a CPU that receives a composite signal and is controlled by the control signal component of the composite signal as recited in claim 48.

Rejection under 35 U.S.C. §103(a) over Spencer, et al, Schwaller and admitted prior art in view of Gohda.

Claims 33 and 47

It is respectfully submitted that claims 33 and 47 derive patentability from their combination with their respective parent claims.

Rejection under 35 U.S.C. §103(a) over Spencer, et al, Schwaller and admitted prior art in view of Tomita.

Claim 40

The examiner stated that it would be obvious to one of ordinary skill in the art at the time of the invention to implement the waveform shaping circuit recited in claim 40 into the modified Spencer, et al invention since Spencer, et al is silent as to how the speed indicating signal is derived and Tomita teaches a method known in the art. See page 4 of the Office Action dated June 12, 2007. However, a claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR International Co. v. Teleflex Inc.* 550 U.S. __, 82 USPQ2d 1385, 1396 (2007).

Rejection under 35 U.S.C. §103(a) over Spencer, et al, Schwaller and admitted prior art in view of Turner.

Claim 41

The examiner stated that it would be obvious to one of ordinary skill in the art at the time of the invention to use an LCD/backlight in the Spencer, et al system because Spencer, et al is silent as to the type of display and Turner teaches one that is known in the art. See page 5, first paragraph, of the Office Action dated June 12, 2007. Once again, a claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *Id.*

Furthermore, claim 41 does not merely recite the generic addition of an LCD/backlight display to a bicycle. Claim 41 recites a first electrical bicycle component that comprises a liquid crystal display component structured to display various data, wherein the second electrical bicycle component comprises a backlight that illuminates the liquid crystal display component. The backlight is a specific structure to which the composite signal recited in claim 28 is applied. As noted above for claim 28, no rational underpinning has been provided as to why one of ordinary skill in the art would want to apply a composite signal to a component, especially a backlight, that is not controlled by the composite signal.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

CLAIM 28. A bicycle electrical control apparatus comprising:

a programmed power/control circuit that receives power from a power supply and outputs a composite signal having a power signal component and a control signal component, wherein the control signal component contains information such that the composite signal can be decoded to extract the information contained in the control signal component;

a first electrical bicycle component that receives the composite signal and is controlled by the information contained in the control signal component of the composite signal;

a second electrical bicycle component that receives the composite signal but is not controlled by the control signal component of the composite signal; and

a power stabilizing circuit that receives the composite signal, stabilizes power provided from the composite signal, and provides stabilized power to the second electrical bicycle component.

CLAIM 29. The apparatus according to claim 28 wherein the power/control circuit comprises a CPU.

CLAIM 30. The apparatus according to claim 28 wherein the control signal has a pulse component.

CLAIM 31. The apparatus according to claim 30 wherein the control signal has an ON component and an OFF component.

CLAIM 32. The apparatus according to claim 28 wherein the power stabilizing circuit comprises a capacitor.

CLAIM 33. The apparatus according to claim 32 wherein the power stabilizing circuit further comprises a diode coupled to prevent reverse current from the second electrical bicycle component to the power/control circuit.

CLAIM 34. The apparatus according to claim 28 wherein the power/control circuit is structured to derive the power signal component from an alternating current source.

CLAIM 35. The apparatus according to claim 34 wherein the power/control circuit is structured to derive the power signal component from a dynamo hub mounted to one of a front wheel or a rear wheel of the bicycle.

CLAIM 36. The apparatus according to claim 28 wherein the power/control circuit is structured to derive the power signal component from a direct current source.

CLAIM 37. The apparatus according to claim 36 wherein the power/control circuit is structured to derive the power signal component from a battery.

CLAIM 38. The apparatus according to claim 28 wherein the power stabilizing circuit stabilizes the power provided from the power signal component to the second electrical bicycle component but not to the first electrical bicycle component.

CLAIM 39. The apparatus according to claim 28 wherein the control signal component comprises a speed indicating signal.

CLAIM 40. The apparatus according to claim 39 wherein the power/control circuit includes a waveform shaping circuit that derives the speed indicating signal from the output of an alternating current generator.

CLAIM 41. The apparatus according to claim 28 wherein the first electrical bicycle component comprises a liquid crystal display component structured to display various data, and wherein the second electrical bicycle component comprises a backlight that illuminates the liquid crystal display component.

CLAIM 42. The apparatus according to claim 28 wherein the first electrical bicycle component comprises a gear shift driving component that drives a gear shift mechanism having a plurality of gear ratios.

CLAIM 43. The apparatus according to claim 42 wherein the second electrical bicycle component comprises a light.

CLAIM 44. The apparatus according to claim 28 wherein the power stabilizing circuit stabilizes a voltage provided to the second electrical bicycle component.

CLAIM 45. The apparatus according to claim 44 wherein the power stabilizing circuit comprises a power storage device coupled in parallel with the second electrical bicycle component.

CLAIM 46. The apparatus according to claim 45 wherein the power storage device comprises a capacitor.

CLAIM 47. The apparatus according to claim 46 wherein the power stabilizing circuit further comprises a diode coupled to prevent reverse current from the capacitor to the power/control circuit.

CLAIM 48. The apparatus according to claim 28 wherein the first electrical bicycle component comprises a CPU that receives the composite signal and is controlled by the control signal component of the composite signal.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None